This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1 -42. ***(Cancelled)***

43. ***(Currently amended)*** A method for inhibiting metastasis of carcinoma cells in a mammal, comprising:

administering to a mammal or cells thereof a therapeutically effective amount of antigen-nanoparticle conjugates comprising a plurality of carbohydrate antigens conjugated to a plurality of nanoparticles, wherein the carbohydrate antigens include TF antigen, T_n antigen, Gb1 antigen, GM_1 antigen, GM_3 antigen, Lewis Y Antigen, or any combination thereof; and

removing tumor cells from said mammal.

44. ***(Original)*** The method of claim 43, wherein the mammal is a human.

45. ***(Original)*** The method of claim 44, wherein the human is diagnosed as having cancer.

46. ***(Original)*** The method of claim 45, wherein the cancer is breast cancer.

47. ***(Currently amended)*** The method of claim 46, wherein metastasis to a lung [[cells]] is inhibited.

48. ***(Cancelled)***

49. ***(Currently Amended)*** The method of claim [[48]] 43, wherein the tumor cells are removed from said mammal prior to administering the therapeutically effective amount of the antigen-nanoparticle conjugates.

50. ***(Currently Amended)*** The method of claim 43, wherein the mammal comprises an immune system, and wherein the carbohydrate antigens are displayed to the immune system in human carcinomas during tumor growth and progression.

51. ***(Currently Amended)*** The method of claim 43, wherein the carbohydrate antigens include TF-Antigen, T_n-Antigen, Gb1 Antigen, GM1 Antigen, [[GM3]] GM_3 Antigen, Lewis Y Antigen, or any combination thereof.

52. ***(Original)*** The method of claim 43, wherein the carbohydrate antigens are capable of inducing galectin-3 surface expression in endothelial cells.

53. ***(Original)*** The method of claim 51, wherein the carbohydrate antigens include TF-Antigen.

54. ***(Original)*** The method of claim 43, wherein the carbohydrate antigens are conjugated to an exterior surface of said nanoparticle.

55. ***(Original)*** The method of claim 43, wherein at least one of the tumor–associated carbohydrate antigens is conjugated, individually, to at least one spacer group, and the at least one spacer group is conjugated to the nanoparticle.

56. ***(Original)*** The method of claim of 55, wherein the spacer group includes PEG, a carbon chain, a carbon chain including sulfur, nitrogen or oxygen in the backbone, a polymer, a peptide, or any combination thereof.

57. ***(Original)*** The method of claim 43, wherein one or more carbohydrate antigens are conjugated to a linking group.

58. ***(Original)*** The method of claim 43, wherein one or more carbohydrate antigens are conjugated, individually to a spacer group, and one or more spacer groups conjugated to a linking group.

59. ***(Original)*** The method of claim 58, wherein the linking group include at least one sulfur atom, carboxylate group, amide group, carbamate group, carbonate group, thiocarbamate group, thiocarbonate group, thioether group, succinamide group, n-hydroxy succinamide group, or any combination thereof.

60. ***(Original)*** The method of claim 43, wherein each of the carbohydrate antigens is covalently linked to one or more sulfur atoms.

61. ***(Original)*** The method of claim 60, wherein at least two of the sulfur atoms are bonded to each other.

62. ***(Original)*** The method of claim 60, wherein the carbohydrate antigens are each linked, individually, to one or more sulfur atoms.

63. ***(Original)*** The method of claim 60, wherein at least one of the sulfur atoms is bonded to at least one of the plurality of nanoparticles using $NaBH_4$.

64. ***(Original)*** The method of claim 63, wherein the bonds between the sulfur atoms and the nanoparticle are characterized as being covalent bonds, ionic bonds, hydrogen bonds, van der Waals bonds, or any combination thereof.

65. ***(Original)*** The method of claim 43, wherein the carbohydrate antigens comprises a disaccharide.

66. ***(Original)*** The method of claim 65, wherein the disaccharide comprises at least one amino sugar group.

67. ***(Original)*** The method of claim 43, wherein one of the carbohydrate antigens is a prognostic indicator, a marker of metastasized carcinoma cells, an adhesion molecule involved in metastasis, or any combination thereof.

68. ***(Original)*** The method of claim 43, wherein at least one of the plurality of the nanoparticles includes gold atoms, silver atoms, platinum atoms, rhodium atoms, palladium atoms, or any combination thereof.

69. ***(Original)*** The method of claim 68, wherein the nanoparticles include colloidal gold particles.

70. ***(Currently amended)*** The method of claim [[1]] 43, wherein at least a portion of the antigen-nanoparticle conjugates are characterized as having a molecular weight, wherein the molecular weights of at least a portion of the antigen-nanoparticle conjugates is in the range of from about 1,000 Daltons to about 1 million Daltons.

71. ***(Original)*** The method of claim 70, wherein the molecular weights of at least a portion of the antigen-nanoparticle conjugates is in the range of from about 10,000 Daltons to about 500,000 Daltons.

72. ***(Original)*** The method of claim 43, wherein at least a portion of the antigen nanoparticle conjugates comprise, individually, from 2 to about 1000 carbohydrate antigens.

73. ***(Original)*** The method of claim 43, wherein at least a portion of the nanoparticles comprise from about 50 to about 10,000 atoms.

74. ***(Original)*** The method of claim 43, wherein at least a portion of the nanoparticles has a dimension in the range of from about 0.5 nm to about 100 nm.

75. ***(Original)*** The method of claim 74, wherein at least a portion of the nanoparticles has a dimension in the range of from about 1 nm to about 10 nm.

76. ***(Original)*** The method of claim 74, wherein at least a portion of the nanoparticles comprises a spheroid shape, and the dimension is the diameter of the nanoparticle.

77-79. ***(Cancelled)***

80. ***(New)*** A method for inhibiting metastasis of carcinoma cells in a mammal, comprising:

administering to a mammal or cells thereof a therapeutically effective amount of antigen-nanoparticle conjugates comprising a plurality of carbohydrate antigens conjugated to a plurality of nanoparticles, wherein the carbohydrate antigens include TF antigen, T_n antigen, Gb1 antigen, GM_1 antigen, GM_3 antigen, Lewis Y Antigen, or any combination thereof, wherein each of the carbohydrate antigens is covalently linked to one or more sulfur atoms.

81. ***(New)*** The method of claim 80, wherein the mammal is a human.

82. ***(New)*** The method of claim 81, wherein the human is diagnosed as having cancer.

83. ***(New)*** The method of claim 82, wherein the cancer is breast cancer.

84. ***(New)*** The method of claim 83, wherein metastasis to a lung is inhibited.

85. ***(New)*** The method of claim 80, further comprising removing tumor cells from said mammal.

86. ***(New)*** The method of claim 85, wherein the tumor cells are removed from said mammal prior to administering the therapeutically effective amount of the antigen-nanoparticle conjugates.

87. *(New)* The method of claim 80, wherein the carbohydrate antigens are displayed to the immune system in human carcinomas during tumor growth and progression.

88. *(New)* The method of claim 80, wherein the carbohydrate antigens include TF-Antigen, T_n-Antigen, Gb1 Antigen, GM1 Antigen, GM_3 Antigen, Lewis Y Antigen, or any combination thereof.

89. *(New)* The method of claim 80, wherein the carbohydrate antigens are capable of inducing galectin-3 surface expression in endothelial cells.

90. *(New)* The method of claim 88, wherein the carbohydrate antigens include TF-Antigen.

91. *(New)* The method of claim 80, wherein the carbohydrate antigens are conjugated to an exterior surface of said nanoparticle.

92. *(New)* The method of claim 80, wherein at least one of the tumor–associated carbohydrate antigens is conjugated, individually, to at least one spacer group, and the at least one spacer group is conjugated to the nanoparticle.

93. *(New)* The method of claim of 92, wherein the spacer group includes PEG, a carbon chain, a carbon chain including sulfur, nitrogen or oxygen in the backbone, a polymer, a peptide, or any combination thereof.

94. *(New)* The method of claim 80, wherein one or more carbohydrate antigens are conjugated to a linking group.

95. *(New)* The method of claim 80, wherein one or more carbohydrate antigens are conjugated, individually to a spacer group, and one or more spacer groups conjugated to a linking group.

96. *(New)* The method of claim 96, wherein the linking group include at least one sulfur atom, carboxylate group, amide group, carbamate group, carbonate group, thiocarbamate group, thiocarbonate group, thioether group, succinamide group, n-hydroxy succinamide group, or any combination thereof.

97. *(New)* The method of claim 80, wherein at least two of the sulfur atoms are bonded to each other.

98. *(New)* The method of claim 80, wherein the carbohydrate antigens are each linked, individually, to one or more sulfur atoms.

99. *(New)* The method of claim 80, wherein at least one of the sulfur atoms is bonded to at least one of the plurality of nanoparticles using $NaBH_4$.

100. *(New)* The method of claim 99, wherein the bonds between the sulfur atoms and the nanoparticle are characterized as being covalent bonds, ionic bonds, hydrogen bonds, van der Waals bonds, or any combination thereof.

101. *(New)* The method of claim 80, wherein the carbohydrate antigens comprises a disaccharide.

102. *(New)* The method of claim 101, wherein the disaccharide comprises at least one amino sugar group.

103. *(New)* The method of claim 80, wherein one of the carbohydrate antigens is a prognostic indicator, a marker of metastasized carcinoma cells, an adhesion molecule involved in metastasis, or any combination thereof.

104. *(New)* The method of claim 80, wherein at least one of the plurality of the nanoparticles includes gold atoms, silver atoms, platinum atoms, rhodium atoms, palladium atoms, or any combination thereof.

105. *(New)* The method of claim 104, wherein the nanoparticles include colloidal gold particles.

106. *(New)* The method of claim 80, wherein the molecular weights of at least a portion of the antigen-nanoparticle conjugates is in the range of from about 1,000 Daltons to about 1 million Daltons.

107. *(New)* The method of claim 106, wherein the molecular weights of at least a portion of the antigen-nanoparticle conjugates is in the range of from about 10,000 Daltons to about 500,000 Daltons.

108. *(New)* The method of claim 80, wherein at least a portion of the antigen nanoparticle conjugates comprise, individually, from 2 to about 1000 carbohydrate antigens.

109. *(New)* The method of claim 80, wherein at least a portion of the nanoparticles comprise from about 50 to about 10,000 atoms.

110. *(New)* The method of claim 80, wherein at least a portion of the nanoparticles has a dimension in the range of from about 0.5 nm to about 100 nm.

111. *(New)* The method of claim 110, wherein at least a portion of the nanoparticles has a dimension in the range of from about 1 nm to about 10 nm.

112. *(New)* The method of claim 110, wherein at least a portion of the nanoparticles comprises a spheroid shape, and the dimension is the diameter of the nanoparticle.

113. *(New)* A method for inhibiting metastasis of carcinoma cells in a mammal, comprising:

administering to a mammal or cells thereof a therapeutically effective amount of antigen-nanoparticle conjugates comprising a plurality of carbohydrate antigens conjugated to a plurality of nanoparticles, wherein the carbohydrate antigens include TF antigen, T_n antigen, Gb1 antigen, GM_1 antigen, GM_3 antigen, Lewis Y Antigen, or any combination thereof, wherein at least a portion of the nanoparticles comprises a spheroid shape having a diameter in the range of from about 0.5 nm to about 100 nm.

114. *(New)* The method of claim 113, wherein the mammal is a human.

115. *(New)* The method of claim 114, wherein the human is diagnosed as having cancer.

116. *(New)* The method of claim 115, wherein the cancer is breast cancer.

117. *(New)* The method of claim 116, wherein metastasis to a lung is inhibited.

118. *(New)* The method of claim 113, further comprising removing tumor cells from said mammal.

119. *(New)* The method of claim 118, wherein the tumor cells are removed from said mammal prior to administering the therapeutically effective amount of the antigen-nanoparticle conjugates.

120. *(New)* The method of claim 113, wherein the carbohydrate antigens are displayed to the immune system in human carcinomas during tumor growth and progression.

121. *(New)* The method of claim 113, wherein the carbohydrate antigens include TF-Antigen, T_n-Antigen, Gb1 Antigen, GM1 Antigen, GM_3 Antigen, Lewis Y Antigen, or any combination thereof.

122. *(New)* The method of claim 113, wherein the carbohydrate antigens are capable of inducing galectin-3 surface expression in endothelial cells.

123. *(New)* The method of claim 121, wherein the carbohydrate antigens include TF-Antigen.

124. *(New)* The method of claim 113, wherein the carbohydrate antigens are conjugated to an exterior surface of said nanoparticle.

125. *(New)* The method of claim 113, wherein at least one of the tumor–associated carbohydrate antigens is conjugated, individually, to at least one spacer group, and the at least one spacer group is conjugated to the nanoparticle.

126. *(New)* The method of claim of 125, wherein the spacer group includes PEG, a carbon chain, a carbon chain including sulfur, nitrogen or oxygen in the backbone, a polymer, a peptide, or any combination thereof.

127. *(New)* The method of claim 113, wherein one or more carbohydrate antigens are conjugated to a linking group.

128. *(New)* The method of claim 113, wherein one or more carbohydrate antigens are conjugated, individually to a spacer group, and one or more spacer groups conjugated to a linking group.

129. *(New)* The method of claim 128, wherein the linking group include at least one sulfur atom, carboxylate group, amide group, carbamate group, carbonate group, thiocarbamate group, thiocarbonate group, thioether group, succinamide group, n-hydroxy succinamide group, or any combination thereof.

130. *(New)* The method of claim 113, wherein each of the carbohydrate antigens is covalently linked to one or more sulfur atoms.

131. *(New)* The method of claim 130, wherein at least two of the sulfur atoms are bonded to each other.

132. *(New)* The method of claim 130, wherein the carbohydrate antigens are each linked, individually, to one or more sulfur atoms.

133. *(New)* The method of claim 130, wherein at least one of the sulfur atoms is bonded to at least one of the plurality of nanoparticles using $NaBH_4$.

134. *(New)* The method of claim 133, wherein the bonds between the sulfur atoms and the nanoparticle are characterized as being covalent bonds, ionic bonds, hydrogen bonds, van der Waals bonds, or any combination thereof.

135. *(New)* The method of claim 113, wherein the carbohydrate antigens comprises a disaccharide.

136. *(New)* The method of claim 135, wherein the disaccharide comprises at least one amino sugar group.

137. *(New)* The method of claim 113, wherein one of the carbohydrate antigens is a prognostic indicator, a marker of metastasized carcinoma cells, an adhesion molecule involved in metastasis, or any combination thereof.

138. *(New)* The method of claim 113, wherein at least one of the plurality of the nanoparticles includes gold atoms, silver atoms, platinum atoms, rhodium atoms, palladium atoms, or any combination thereof.

139. *(New)* The method of claim 138, wherein the nanoparticles include colloidal gold particles.

140. ***(New)*** The method of claim 113, wherein the molecular weights of at least a portion of the antigen-nanoparticle conjugates is in the range of from about 1,000 Daltons to about 1 million Daltons.

141. ***(New)*** The method of claim 140, wherein the molecular weights of at least a portion of the antigen-nanoparticle conjugates is in the range of from about 10,000 Daltons to about 500,000 Daltons.

142. ***(New)*** The method of claim 113, wherein at least a portion of the antigen nanoparticle conjugates comprise, individually, from 2 to about 1000 carbohydrate antigens.

143. ***(New)*** The method of claim 113, wherein at least a portion of the nanoparticles comprise from about 50 to about 10,000 atoms.

144. ***(New)*** The method of claim 113, wherein at least a portion of the nanoparticles has a dimension in the range of from about 1 nm to about 10 nm.